DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/09/2008 has been entered.

Claim Rejections - 35 USC § 103

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen et al. (US 5491687) in view of Gil et al. (US 2004/0062244).

As per claim 1, Christensen et al. discloses a method for error detection in a high-speed switching environment, comprising:

receiving, at a switch input port, a plurality of packets, including a first packet having at least first and second portions (see abstract, figure 1, block 72, figure 2a, blocks 202 and 204); initiating switching of the first portion before the entire second portion is received at the switch input port (see columns 1-3);

Christensen et al. discloses frame examination for errors (see column 5) but does not explicitly disclose using tag data associated with the first packet to calculate error detection data for the first packet, the error detection data calculated at the switch before the entire second portion is received at the switch input port; at the switch, inserting the error detection data calculated using the tag data into the plurality of packets; and performing an error detection technique on the first packet using the error detection data that was calculated using the tag data associated with the first packet.

Gil et al. using tag data associated with the first packet to calculate error detection data for the first packet, the error detection data calculated at the switch before the entire second portion is received at the switch input port (see figure 5, 6 and paragraphs 10 and 21-23); at the switch, inserting the error detection data calculated using the tag data into the plurality of packets (see figure 5, 6 and paragraphs 10 and 21-23, bad tag flag); and performing an error detection technique on the first packet using the error detection data that was calculated using the tag data associated with the first packet (see figure 5, 6 and paragraphs 10 and 21-23).

Christensen et al. and Gil et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Gil et al.'s error checking technique (see figure 5 and paragraphs 10 and 21-23) in Christensen et al.'s switch (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety in a latency driven switching environment.

As per claim 2, Christensen et al. teaches of a method in a high-speed switching environment (see column1-3), wherein the initiating switching of the first portion is accomplished in accordance with a cut-through forwarding technique (see column 1-3).

As per claim 3, Christensen et al. teaches of a method in a high-speed switching environment (see column 1-4), wherein the initiating switching of the first portion is accomplished in accordance with a delayed cut-through forwarding technique (see column 1-4).

As per claim 4, Christensen et al. teaches of a method in a high-speed switching environment (see columns 1-4) comprising looking up a tag ID (see column 5) for association with the first packet (see column 5).

As per claim 5, Christensen et al. teaches of a method in a high-speed switching environment (see columns 1-4), further comprising assigning the tag ID for association with the first packet (see column 5).

As per claim 6, Christensen et al. teaches of a method in a high-speed switching environment (see figure 1, columns 1-5), further comprising receiving the first portion (see figure 1, columns 1-5) at a switch output port wherein error detection is performed at the switch output port (see figure 1, columns 1-5).

As per claim 7 and 8, Christensen et al. does not expressly disclose the error detection technique is accomplished according to a limited cyclical redundancy checksum technique and the cyclical redundancy checksum technique includes recalculating a CRC of the first packet based only upon changes in the tag data of the first packet.

Gil et al. discloses the error detection technique is accomplished according to a limited cyclical redundancy checksum technique and the cyclical redundancy checksum

technique includes recalculating a CRC of the first packet based only upon changes in the tag ID of the first packet (see paragraph 10 and 21-23).

Christensen et al. and Gil et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Gil et al.'s error checking technique (see paragraph 10 and 21-23) in Christensen et al.'s switch (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety.

As per claim 9, Christensen et al. discloses a system for error detection in a high-speed switching environment, comprising: a first switch input port being operable to receive a plurality of packets, the plurality of packets including a first packet having first and second portions (see abstract, figure 1, block 72, figure 2a, blocks 202 and 204); a switch core operable (see figure 1): and a detection module (see figure 1) being operable to perform an error detection technique on the first packet using the error detection data that was calculated using the tag data associated with the first packet (see column 1-5).

Christensen et al. does not expressly disclose using tag data associated with the first packet to calculate error detection data for the first packet, the error detection data calculated before the entire second portion is received at the switch input port; and

switch the first portion before the entire second portion by the switch core is received at the first switch input port; inserting the error detection data calculated using the tag data into the plurality of packets.

Gil et al. using tag data associated with the first packet to calculate error detection data for the first packet, the error detection data calculated at the switch before the entire second portion is received at the switch input port (see figure 5, 6 and paragraphs 10 and 21-23); at the switch core, inserting the error detection data calculated using the tag data into the plurality of packets (see figure 5, 6 and paragraphs 10 and 21-23, bad tag flag); and detection module (figure 5, block 545) performing an error detection technique on the first packet using the error detection data that was calculated using the tag data associated with the first packet (see figure 5, 6 and paragraphs 10 and 21-23).

Christensen et al. and Gil et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Gil et al.'s error checking technique (see figure 5 and paragraphs 10 and 21-23) in Christensen et al.'s switch (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety in a latency driven switching environment.

As per claim 10, Christensen et al. teaches of a system in a high-speed switching environment (see columns 1-4) comprising looking up a tag ID (see column 5) for association with the first packet (see column 5).

As per claim 11, Christensen et al. teaches of a system in a high-speed switching environment (see columns 1-4), further comprising assigning the tag ID for association with the first packet (see column 5).

As per claim 12, Christensen et al. teaches of a system in a high-speed switching environment (see columns 1-4), further comprising a switch output port being operable to receive the first portion of the first packet (see column 1-5).

As per claim 13, Christensen et al. teaches of a system in a high-speed switching environment (see columns 1-4), wherein the switch output port comprises the error detection module.

As per claim 14 and 15, Christensen et al. does not expressly disclose the error detection technique is accomplished according to a limited cyclical redundancy checksum technique and the cyclical redundancy checksum technique includes recalculating a CRC of the first packet based only upon changes in the tag ID of the first packet.

Gil et al. discloses the error detection technique is accomplished according to a limited cyclical redundancy checksum technique and the cyclical redundancy checksum technique includes recalculating a CRC of the first packet based only upon changes in the tag data of the first packet (see paragraph 10 and 21-23).

Christensen et al. and Gil et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Gil et al.'s error checking technique (see paragraph 10 and 21-23) in Christensen et al.'s switch (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety.

As per claim 16, Christensen et al. teaches of a system in a high-speed switching environment (see column1-3), wherein the initiating switching of the first portion is accomplished in accordance with a cut-through forwarding technique (see column 1-3).

As per claim 17, Christensen et al. teaches of a system in a high-speed switching environment (see column 1-4), wherein the initiating switching of the first portion is accomplished in accordance with a delayed cut-through forwarding technique (see column 1-4).

As per claim 18, Christensen et al. teaches of a system in a high-speed switching environment (see abstract, figure 1, block 72, figure 2a, blocks 202 and 204) comprising: one or more memory structures (see columns 1-5); a plurality of input structures (see columns 1-5) that are each operable to receive a packet (see columns 1-5) communicated from a component of a communications network and write the

received packet (see column 1-5) to one or more of the one or more memory structures (see columns 1-5); a first switching structure (see columns 1-5) coupling the plurality of input structures to the one or more memory structures (see columns 1-5) such that each of the plurality of input structures are operable to write to each of the one or more memory structures (see column 1-5);

a plurality of output structures that are each operable to read a packet from one or more of the one or more memory structures (see columns 1-5) for communication to a component of the communications network; a second switching structure (see columns 1-5) coupling the plurality of output structures to the one or more memory structures such that each of the plurality of output structures are operable to read from each of the one or more memory structures (see columns 1-5), an output structure being operable to read a first portion of one of the packets from one or more of the one or more memory units for communication to a first component of the communications network before an input structure has received a second portion of the one of the packets communicated from a second component of the communications network (see columns 1-5); and of tag data associated with the first packet (see columns 1-5) and a detection module (see figure 1 and columns 1-5).

Christensen et al. does not expressly disclose a detection module operable for performing an error detection technique on the first packet using tag data associated with the first packet and the error detection data calculated at the switch and inserted into the packet at the switch.

Gil et al. using tag data associated with the first packet to calculate error detection data for the first packet, the error detection data calculated at the switch before the entire second portion is received at the switch input port (see figure 5, 6 and paragraphs 10 and 21-23); at the switch core, inserting the error detection data calculated using the tag data into the plurality of packets (see figure 5, 6 and paragraphs 10 and 21-23, bad tag flag); and detection module (figure 5, block 545) performing an error detection technique on the first packet using the error detection data that was calculated using the tag data associated with the first packet (see figure 5, 6 and paragraphs 10 and 21-23).

Christensen et al. and Gil et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Gil et al.'s error checking technique (see figure 5 and paragraphs 10 and 21-23) in Christensen et al.'s switch (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety in a latency driven switching environment.

As per claim 19, Christensen et al. teaches of a system in a high-speed switching environment, wherein the memory structures are operable to store tag IDs for association with the packets (see column 5).

As per claim 20, Christensen et al. does not expressly disclose the error detection technique is accomplished according to a limited cyclical redundancy checksum technique.

Gil et al. et al. discloses the error detection technique is accomplished according to a limited cyclical redundancy checksum technique (see paragraph 10).

Christensen et al. and Gil et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Gil et al.'s error checking technique (see paragraph 10) in Christensen et al.'s switch (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See form 892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABDULLAH RIYAMI whose telephone number is (571)270-3119. The examiner can normally be reached on Monday through Thursday 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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